

THE
AMERICAN JOURNAL
OF
PHYSIOLOGY

VOLUME 138

BALTIMORE, MD.
1942-1943

THE
AMERICAN JOURNAL
OF
PHYSIOLOGY

Vol. 1
No. 1
1907

CONTENTS

No. 1. DECEMBER, 1942

Efficacy of Adrenal Cortical Extract and of Paredrine in the Prevention of Experimental Shock following Venous Occlusion of a Limb. <i>I. H. Shleser and R. Asher</i>	1
The Distribution of Lactic Acid in Human Blood. <i>David G. Decker and Jack D. Rosenbaum</i>	7
Influence of Proprioceptive Vagal Afferents on Panting and Accessory Panting Movements in Mammals and Birds. <i>W. A. Hiestand and W. C. Randall</i>	12
Relation between Pulmonary Ventilation and Oxygen Consumption after Exercise. <i>Julio M. Barman, Frank Consolazio and Manuel F. Moreira</i>	16
Metabolic Effects of Local Ischemia during Muscular Exercise. <i>Julio M. Barman, Manuel F. Moreira and Frank Consolazio</i>	20
The Influence of Rickets and of Healing of Rickets on the Mechanical Properties of the Tibiae of the Rat. <i>A. A. Schiller, H. C. Struck and C. I. Reed</i>	27
An Attempted Correlation of Mechanical Properties of Bone with Antirachitic Healing and with Molecular Structure as Determined by X-ray Diffraction Technique. <i>C. I. Reed and B. P. Reed</i>	34
The Effect of Meat and Meat Fractions on the Fatty Liver of the Depancreatized and Pancreatic-Duct Ligated Dog. <i>Elaine P. Ralli and Paul H. Rubin</i>	42
The Action of Electrical Stimuli on the Turtle's Ventricle. <i>A. Rosenblueth, W. Daughaday and D. D. Bond</i>	50
Cardiovascular Effects of Experimental Insomnia. <i>Franklin Henry</i>	65
Decreased Fat Appetite Produced in Rats by Ligation of the Common Bile Duct. <i>Curt P. Richter and John R. Birmingham</i>	71
Creatinuria in Man Following the Oral Administration of Caffeine. <i>George Bachmann, John Haldi, Charles Ensor and Winfrey Wynn</i>	78
The Motor Innervation of the Colon. <i>J. A. Wells, I. H. Mercer, John S. Gray and A. C. Ivy</i>	83
Renal Excretion of Potassium Salts. <i>Alexander W. Winkler and Paul K. Smith</i>	94
Control of Normal Breathing in Fishes by Receptors Located in the Regions of the Gills and Innervated by the IXth and Xth Cranial Nerves. <i>Edwin B. Powers and Robert T. Clark, Jr.</i>	104
The Distribution, Flow, Protein and Urea Content of Renal Lymph. <i>Jerome Sugarman, M. Friedman, Evalyn Barrett and T. Addis</i>	108
The Locus and the Nature of the A-V Pause in the Spread of Cardiac Activation. <i>A. S. Gilson, Jr.</i>	113
The Apparent Volume of Distribution of Sulfocyanate and of Sulfanilamide in the Dog. <i>J. Russell Elkinton and Max Tafel</i>	126
Abnormal Capillary Resistance in Swine Suffering from an Inherited Bleeding Disease. <i>Edwin T. Mertz</i>	136
Metabolism of Asphyxiated Spinal Cord. <i>A. van Harreveld and B. Tyler</i>	140
Phosphorus Absorption in the Anesthetized Dog as Determined with the Radioactive Isotope. <i>Louise H. Weissberger and E. S. Nasset</i>	149
An Experimental Study of the Tourniquet as a Method for Inducing Circulatory Failure in the Dog. <i>W. W. Swingle, J. W. Remington, W. Kleinberg, V. A. Drill and W. J. Eversole</i>	156
Cardiac Injury Potentials. <i>J. A. E. Eyster and Walter J. Meek</i>	166
The Influence of Growth on the Phosphorus Metabolism of the Mouse and the Effect of Thyroxine at Various Ages. <i>Marlene Falkenheim</i>	175
Litter Size, Growth Rate and Heat Production of Suckling Rats. <i>Eugene B. Brody</i>	180
The Effect of a Protein Deficient Diet on the Serum Phosphatase and Hepatic Dye Clearance of Dogs. <i>Victor H. Hough and Smith Freeman</i>	184

No. 2. JANUARY, 1943

The Relative Retention of Infused Chloride, Urea and Water. A. V. Wolf.....	191
The Behavior of the Spleen in Hemorrhagic Hypotension and Shock. R. N. Lewis, J. M. Werle and C. J. Wiggers.....	205
A Study of Spontaneous Fulminant Shock in a Heart-Lung-Dog Preparation. René Wégria, Alberto Guevara Rojas and Carl J. Wiggers.....	212
Increased Erythrocyte Destruction on a High Fat Diet. Arthur Loewy, L. Willard Freeman, Albino Marchello and Victor Johnson.....	230
The Secretion of Alkaline Phosphatase by the Dog's Intestine. A. J. Kosman, J. W. Kaulbersz and Smith Freeman.....	236
Influence of Nephrectomy on Ovarian Response to Gonadotropins. Fritz Bischoff and Georgena J. Clarke.....	241
Histological Effects in Rats Resulting from Adding Rubidium or Cesium to a Diet Defi- cient in Potassium. Richard H. Follis, Jr.....	246
The Influence of Atropine on the Atrophy of Denervated Skeletal Muscle of the Mon- key (<i>Macacus rhesus</i>). Samuel Soskin and R. Levine.....	251
Influence of Gelatin Ingestion on the Concentration in the Rat Gastrocnemius of Phos- phocreatine and Related Compounds. S. M. Horvath.....	254
The Relation of Food Consumption, Hypophysis and Adrenal Cortex to Serum Albumin Metabolism in the Rat. Louis Levin.....	258
The Antagonistic Effect of Lipocaine and the Anterior Pituitary on Fat Metabolism. Or- mand C. Julian, Dwight E. Clark, John Van Prohaska, C. Vermeulen and Lester R. Dragstedt.....	264
Studies on Intraosseous Injections of Epinephrine. David I. Macht.....	269
The Initiation of Impulses in Cardiac Muscle. Emil Bozler.....	273
The Electrical Activity of a Thalamocortical Relay System. E. W. Dempsey and R. S. Morison.....	283
Mechanism of Thalamocortical Augmentation and Repetition. R. S. Morison and E. W. Dempsey.....	297
Correlation of Vascular Changes with Changes in Motor Activity and Secretion in the Stomach of Man. Stewart Wolf and Harold G. Wolff.....	309
Phosphorus Deposition in the Egg as Measured with Radioactive Phosphorus. F. W. Lorenz, I. Perlman and I. L. Chaikoff.....	318
Oxygen Consumption in Vitamin E Deficiency. Hans Kaunitz and Alwin M. Pappen- heimer.....	328
The Effect of Histamine Antagonists on Gastric Secretion. J. E. Bourque and E. R. Loew.....	341
The Development of Resistance by Rats and Guinea Pigs to Amounts of Trauma Usually Fatal. R. L. Noble.....	346
Effect of the Total Loss of Pancreatic Juice on the Blood and Liver Lipids. J. Garratt Allen, C. Vermeulen, Frederick M. Owens, Jr., and Lester R. Dragstedt.....	352
Studies on the Glycogen Metabolism of Atrophic and Regenerating Muscle. B. Lazere, J. D. Thomson and H. M. Hines.....	357
Postural Changes in Respiration. Elizabeth Brogdon Franseen and F. A. Hellebrandt.....	364
Liver Function, Pulse Rate and Temperature of Hyperthyroid Dogs. Effect of a Yeast- free Diet and a High B Vitamin Diet. Victor A. Drill, C. Boyd Shaffer and Richard Overman.....	370
Effect of Ultraviolet Radiation on Body Weight of Mice. Harold F. Blum, Hugh G. Grady and John S. Kirby-Smith.....	378
The Effects of Vitamin D and Other Sterols on Blood Pressure in the Rat. H. L. Briskin, F. R. Stokes, C. I. Reed and R. G. Mrazek.....	385

No. 3. FEBRUARY, 1943

The Rôle of Pressoreceptors in the Regulation of Blood Pressure in the Rabbit. <i>Thelma H. Simister and Ruth E. Conklin</i>	391
Gluconeogenesis and Cellular Injury. A Further Inquiry into the Mechanism Involved in Diabetes Enhanced by Inflammation. <i>Valy Menkin</i>	396
The Oxygen Consumption of the Skin During the Hair Cycle in the White Rat. <i>Earl O. Butcher</i>	408
The Effect of an Encircling Conducting Band upon the Action Currents of Striated Muscle. <i>Bruno Kisch and Myron M. Schwarzschild</i>	412
Removal of Red Cells from the Active Circulation by Sodium Pentobarbital. <i>P. F. Hahn, W. F. Bale and J. F. Bonner, Jr.</i>	415
Quantitative Measurements of Cerebral Blood Flow in the Macaque Monkey. <i>Paul R. Dumke and Carl F. Schmidt</i>	421
The Cytolytic Effect of Saponin on the Walls of Vessels. <i>Eric Ponder and Chester Hyman</i>	432
Effect of Hypophysectomy and of Purified Pituitary Hormones on the Liver Arginase Activity of Rats. <i>Heinz Fraenkel-Conrat, Miriam E. Simpson and Herbert M. Evans</i>	439
Studies on Hemoconcentration and Shock Following Severe Hemorrhage. <i>R. E. Weston, Martha Janota, S. O. Levinson and H. Necheles</i>	450
The Effect of Nembutal-Ether Anesthesia upon Blood Concentration. <i>Leonard W. Jarcho</i>	458
The Mechanism of Bile Flow Inhibition upon Distention of the Colon or Stimulation of Its Nerve Supply. <i>John Warkentin, J. S. Huston, F. W. Preston and A. C. Ivy</i> ...	462
Excretion of the Urinary Antidiuretic Principle in Renal Hypertensive Dogs. <i>D. B. Frankel and G. E. Wakerlin</i>	465
Sympathetic and Vagal Interaction in Emotional Responses of the Heart Rate. <i>D. D. Bond</i>	468
Effect of Sex Hormones on the Erythrocyte Number in the Blood of the Domestic Fowl. <i>Elsie Taber, David E. Davis and L. V. Domm</i>	479
Thiamine and the Specific Dynamic Action of Carbohydrate and Fat. <i>Gordon C. Ring</i>	488
Reactions of the Aorta in Hemorrhagic Hypotension and Shock. <i>Carl J. Wiggers, René Wégria and Neil D. Nickerson</i>	491
Capillary Permeability to Intravenously Administered Gelatine. <i>J. Maxwell Little and Herbert S. Wells</i>	495
Studies in Experimental Traumatic Shock with Particular Reference to Plasma Po- tassium Changes. <i>Jeanne F. Manery and D. Y. Solandt</i>	499
The Rôle of Oxygen in the Metabolism and Motility of Human Spermatozoa. <i>John MacLeod</i>	512
Observation on the Various Factors Influencing the Increase of Erythrocytic Fragility Induced by Stasis. <i>Chiao Tsai, C. J. Chen and K. Y. Chiu</i>	519
Chemical Changes in the Rabbit Heart During Hypertrophy. <i>George H. Hitchings, Margaret A. Daus and Joseph T. Wear</i>	527
Reflexes from the Limbs as a Factor in the Hyperpnea of Muscular Exercise. <i>J. H. Comroe, Jr. and Carl F. Schmidt</i>	536
The Effect of Bile in the Intestine on the Secretion of Pancreatic Juice. <i>J. Earl Thomas and J. O. Crider</i>	548
Observations Concerning the Origin of Renal Lymph. <i>Alex Kaplan, Meyer Friedman and H. E. Kruger</i>	553
The Absence of Rennin from Adult Human Gastric Juices. <i>Louis B. Dotti and Israel S. Kleiner</i>	557

Histological Studies of the Pancreas and Associated Tissues of Wild and Experimentally Fed Young Chinook Salmon. <i>Lauren R. Donaldson</i>	560
---	-----

No. 4. MARCH, 1943

The Effect of Sympathomimetic Amines upon the Output of Respiratory Tract Fluid in Rabbits. <i>Eldon M. Boyd, Shirley Jackson and Alice Ronan</i>	565
Plasma Proteins (Albumin and Globulin) and Red Cell Volume Following a Single Severe Non-Fatal Hemorrhage. <i>Robert Elman, Carl E. Lischer and Harriet Wolf Davey</i>	569
The Relationship of the Diabetogenic Effect of Diethylstilbestrol to the Adrenal Cortex in the Rat. <i>Dwight J. Ingle</i>	577
The Influence of Interelectrode Distance in Electrical Stimulation of Nerve and of Striated and Ventricular Muscle. <i>A. Rosenblueth and G. H. Acheson</i>	583
Experimentally Induced Hypertension in Parabolic Rats. <i>Arthur Grollman and Colter Rule</i>	587
Venous Pressure and Circulation Time During Acute Progressive Anoxia in Man. <i>I. Ershler, C. E. Kossmann and M. S. White</i>	593
The Reputed Reservoir Function of the Spleen of the Domestic Fowl. <i>Paul D. Sturkie</i>	599
Regional Relationships of Rate of Water Loss in Normal Adults in a Subtropical Climate. <i>George E. Burch and William A. Sodeman</i>	603
Effects of Inhalation of 100 per cent and 14 per cent Oxygen upon Respiration of Unanesthetized Dogs Before and After Chemoreceptor Denervation. <i>James G. Watt, Paul R. Dumke and Julius H. Comroe, Jr.</i>	610
A Study of the Effect of Spontaneous Variations in Blood Pressure upon Spontaneous Variations in the Volume of the Finger Tip. <i>Charles Neumann</i>	618
Variability of Certain Factors in the Blood Picture of Women. <i>Eva G. Donelson, Jane M. Leichsenring and Margaret A. Ohlson</i>	626
Roentgenkymographic Determination of Cardiac Output in Syncope Induced by Gravity. <i>H. S. Mayerson</i>	630
Disappearance Curves of the Dye T-1824 after its Injection into the Blood Stream. <i>Barry G. King, Kenneth S. Cole and Enid T. Oppenheimer</i>	636
Distribution in Leads I, II and III of Potentials Applied to the Surface of the Heart. <i>H. E. Hoff, L. H. Nahum and W. Kaufman</i>	644
Ninhydrin, Crystalline Papain and Fibrin Clot. <i>John H. Ferguson and Paul H. Ralph</i>	648
The Influence of Thyroid, Dinitrophenol and Swimming on the Glycogen and Phosphocreatine Level of the Rat Heart in Relation to Cardiac Hypertrophy. <i>Walter B. Shelley, Charles F. Code and Maurice B. Visscher</i>	652
Effects on Man of Severe Oxygen Lack. <i>S. M. Horvath, D. B. Dill and W. Corwin</i>	659
Age and the Calorigenic Response to Subcutaneously Administered Adrenalin in the Rat. <i>Ivan L. Bunnell and F. R. Griffith, Jr.</i>	669
The Effect of Dietary Composition on Pancreatic Enzymes. <i>M. I. Grossman, Harry Greengard and A. C. Ivy</i>	676
The Effect of Atropine on the Coronary Blood Flow of Trained Dogs with Denervated and Partially Denervated Hearts. <i>Hiram E. Essex, J. F. Herrick, Frank C. Mann and Edward J. Baldes</i>	683

No. 5. APRIL, 1943

Effects of Exercise on the Coronary Blood Flow, Heart Rate and Blood Pressure of Trained Dogs with Denervated and Partially Denervated Hearts. <i>Hiram E. Essex, J. F. Herrick, Edward J. Baldes and Frank C. Mann</i>	687
The Disappearance of T-1824 and Structurally Related Dyes from the Blood Stream. <i>Magnus I. Gregersen and Ruth A. Rawson</i>	698

The Binding of T-1824 and Structurally Related Diazo Dyes by the Plasma Proteins. <i>Ruth A. Rawson</i>	708
An Experimental Study of Flow Patterns in Various Peripheral Arteries. <i>R. E. Shipley, D. E. Gregg and E. F. Schroeder</i>	718
A Study of Flow and Pattern Responses in Peripheral Arteries to the Injection of Vasomotor Drugs. <i>W. H. Pritchard, D. E. Gregg, R. E. Shipley and A. S. Weisberger</i> ...	731
Effect of pH and Certain Electrolytes on the Metabolism of Ejaculated Spermatozoa. <i>Henry A. Lardy and Paul H. Phillips</i>	741
Blood Ketone Bodies in Relation to Carbohydrate Metabolism in Muscular Exercise. <i>A. H. Neufeld and W. D. Ross</i>	747
The Effect of Hemorrhage on Normal and Hypocoagulable Blood and Lymph. <i>B. G. P. Shafiroff, H. Doubilet, R. Sifert and CoTui</i>	753
Drug Actions on the Spontaneously Beating Turtle Ventricle Indicating Lack of Innervation. <i>Edwin P. Hiatt and Walter E. Garrey</i>	758
Responses in Size, Output and Efficiency of the Human Heart to Acute Alteration in the Composition of Inspired Air. <i>Ancel Keys, J. Paul Stapp and Antonio Violante</i>	763
Segmental Motor Innervation of the Tibialis Anterior and Gastrocnemius-Plantaris Muscles in the Dog. <i>O. Léonard Huddleston and Clayton S. White</i>	772
Humoral Intermediation of Nerve Cell Activation in the Central Nervous System. <i>Robert Gesell, E. O. Hansen and Joseph J. Worzniak</i>	776
The Effect of Pancreatectomy on Fat Absorption from the Intestines. <i>Cornelius Vermeulen, Frederick M. Owens, Jr., and Lester R. Dragstedt</i>	792
Index.....	797